

## CLAIMS:

1. A device for generating images and/or projections by means of an imaging method, which device includes a device for the detection of input radiation which includes at least one acquisition element which comprises a sensor with a  $\text{Pr}^{3+}$ -activated scintillator for converting the input radiation into UV radiation and a photodiode which converts an optical signal into an electrical signal.
2. A device for generating images and/or projections as claimed in claim 1, characterized in that the  $\text{Pr}^{3+}$ -activated scintillator is chosen from the group  $\text{LaPO}_4:\text{Pr}$ ,  $\text{LuF}_3:\text{Pr}$ ,  $\text{LuCl}_3:\text{Pr}$ ,  $\text{LuBr}_3:\text{Pr}$ ,  $(\text{Lu}_{1-x}\text{Y}_x)\text{PO}_4:\text{Pr}$  where  $0 \leq x \leq 1$ ,  $(\text{Lu}_{1-x}\text{Y}_x)\text{SiO}_5:\text{Pr}$ , where  $0 \leq x \leq 1$ ,  $(\text{Lu}_{1-x}\text{Y}_x)\text{Si}_2\text{O}_7:\text{Pr}$ , where  $0 \leq x \leq 1$ ,  $(\text{Lu}_{1-x}\text{Y}_x)\text{BO}_3:\text{Pr}$ , where  $0 \leq x \leq 1$ , and  $\text{Ca}_{1-2y}\text{Li}_2\text{SiO}_4:\text{Pr}_y\text{Na}_y$ , where  $0.001 \leq y \leq 0.2$ .
3. A device for generating images and/or projections as claimed in claim 1 or claim 2, characterized in that the device is arranged to carry out the PET method as the imaging method.
4. A device for generating images and/or projections as claimed in claim 1 or claim 2, characterized in that the device is arranged to carry out the SPECT method as the imaging method.
5. A device for generating images and/or projections as claimed in claim 1 or claim 2, characterized in that the device is arranged to carry out the imaging method by means of X-rays.
6. A device for generating images and/or projections as claimed in one of the claims 1 to 5, characterized in that a color converter which contains a luminous substance which can be excited by UV radiation is arranged between the sensor and the photodiode in the device for the detection of input radiation.

7. A device for generating images and/or projections as claimed in claim 6, characterized in that the color converter comprises a polymer light guide which is doped with the luminous substance that can be excited by UV radiation.
- 5 8. A device for generating images and/or projections as claimed in claim 6, characterized in that the color converter comprises a polymer light guide and a separate layer with the luminous substance that can be excited by UV radiation.
- 10 9. A device for the detection of input radiation which includes at least one acquisition element which comprises a sensor with a  $\text{Pr}^{3+}$ -activated scintillator for converting the input radiation into UV radiation and a photodiode which converts an optical signal into an electrical signal.